

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Original): A particle beam device which operates upon a test subject, wherein at least a portion of the particle beam device is maintained in a vacuum, the particle beam device comprising at least:

a particle generator;

at least a first particle focusing device, the particle generator and the at least first particle focusing device together being formed into a first particle beam column;

a plurality of air bearings to support the particle beam column and to permit the particle beam column to move in a nearly frictionless manner across a top surface of a first support table;

a sample holding station located within the top surface of the first support table, the sample holding station holding at least a first surface of a test object in an essentially coplanar relationship with the top surface of the first support table, wherein the sample holding station comprises at least a well in the top surface of the first support table for receiving the test object therein, and wherein the sample holding station further comprises a plurality of lifter assemblies and a chuck, the lifter assemblies in a first extended position receiving the test object and in a second, compressed position holding the test object in proximity to the chuck so that the chuck can hold the test object, the compressed position being such that the top surface of the test object is held in a coplanar relationship with the top surface of the first support table; and

an air bearing leveling tool for placing the test object into the second, compressed position, the air bearing leveling tool having a plurality of air bearings which are applicable to the top surface of the test object to thereby force the test object and the lifter assemblies into the second, compressed position.

Claim 2 (Original): The particle beam device of claim 1 wherein a staged vacuum seal is fitted to the particle beam column between the at least first particle focusing

device and the top surface of the first support table, the staged vacuum seal creating a plurality of concentric, reduced pressure zones around the first particle beam column.

Claim 3 (Original): The particles beam device of claim 2 wherein the staged vacuum seal is comprised of a plurality of nested circles, the innermost reduced pressure zone having a circular cross section and succeeding reduced pressure zones have a torroidal cross section surrounding the innermost circular reduced pressure zone.

Claim 4 (Original): The particle beam device of claim 3 wherein the innermost circular reduced pressure zone has a first predefined air pressure that permits operation of the particle beam within the innermost circular reduced pressure zone.

Claim 5 (Original): The particle beam device of claim 4 wherein each succeeding torroidal reduced pressure zone has an air pressure greater than the preceding reduced pressure zone.

Claim 6 (Original): The particle beam device of claim 1 wherein the test object comprises a semiconductor wafer of first predetermined diameter and the well of the sample holding station is circular and has a second predetermined diameter at least equal to the first predetermined diameter.

Claim 7 (Currently Amended): The particle beam device of claim 6 the plurality of air bearings are fixed into a rigid frame, an active, gas bearing surface of each of the air bearings being held in a co-planar relationship with all the other active, gas bearing surfaces of the air bearings, the frame having a predetermined diameter greater that than the semiconductor wafer's diameter, the active, gas bearing surfaces being applied to the top surface of the semiconductor wafer and forcing the wafer and the lifter assemblies into the second, compressed position during operation of the particle beam device.

Claim 8 (Original): The particle beam device of claim 7 wherein the lifter assemblies are filled with a low melting point metal alloy, heat being applied to the lifter assemblies when the lifter assemblies are required to move from the first position to the second position and when the lifter assemblies are required to move from the second position to

the first position, heat being removed and the metal alloy solidifying, fixing the lifter assemblies into position at all other times.

Claims 9-18 (Cancelled).

Claim 19 (New): The particle beam device of claim 1 wherein the test object comprises a semiconductor wafer of first predetermined diameter and the well of the sample holding station is circular and has a second predetermined diameter at least equal in size to the first predetermined diameter.